

Serial No. 10/779,820

Attorney Docket No. 1080.1135

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

Shinobu SASAKI

Serial No. 10/779,820

Group Art Unit: 3664

Confirmation No. 6805

Filed: February 18, 2004

Examiner: Jen Mingjen

For: LIBRARY DEVICE

**APPLICANT APPEAL BRIEF UNDER 37 C.F.R §41.37**

**Mail Stop Appeal Brief-Patents**

Commissioner for Patents

PO Box 1450

Alexandria, VA 22313-1450

In a Notice of Appeal filed August 11, 2008, the Applicant appealed from the Examiner's Final Office Action mailed May 12, 2008 finally rejecting claims 1-8 and 10. Submitted herewith is an Applicant Appeal Brief under 37 CFR 41.37, and the requisite fees set forth in 37 C.F.R. §41.20(b)(2).

A Petition for a 2-month extension of time, together with the requisite fee for same, is submitted herewith, thereby extending the period for filing the Appeal Brief to December 11, 2008. This Appeal Brief is filed on December 9, 2008.

If any further fees are required in connection with this filing, please charge our Deposit Account No. 19-3935.

**I. REAL PARTY IN INTEREST**

The real party in interest is Fujitsu Limited, Kawasaki, Japan, the assignee of the present above-identified pending US patent application.

## **II. RELATED APPEALS AND INTERFERENCES**

Appellant, Appellant's legal representative, and the assignee do not know of any prior or pending appeals, interferences or judicial proceedings, which may be related to, directly affect or be directly affected by, or have a bearing on, the Board's decision in this appeal.

### **III. STATUS OF CLAIMS**

Claims 1-10 are pending.

Claims 9 is withdrawn.

Claims 1-8 and 10 are rejected.

Rejection of elected pending claims 1-8 and 10 is appealed.

#### **IV. STATUS OF AMENDMENTS**

No amendment was filed after the final office action of May 12, 2008.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1-8 and 10 are being appealed. The appealed independent claims are 1 and 10. The references to the specification and drawings are for purposes of summarizing the claims according to 37 CFR 41.37, and the claims are not limited to the specific example embodiments referred to in the specification and the drawings.

### A. Independent claim 1

1. (previously presented) A library device comprising:

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (1).

a cell array which consists of an array of multiple cells each of which contains one of multiple cartridges each containing a storage medium;

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (2) and page 11, lines 17-19.

media drives in which the cartridges are removably mounted and which access the storage medium contained in the cartridges;

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (5, 3).

a robot which transfers the cartridges between the cell array and the media drives; and

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (6, 3, 2).

a control board which controls operation of the library device, being equipped with a first memory which stores control information needed to control the operation of the library device, rewritably in a non-volatile manner,

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (8\_1, 3) and page 12, lines 1-11 and lines 21-24; page 13, lines 1-8; and FIG. 3 (12).

wherein each of the cartridges contains the storage medium and comprises a second memory which stores information rewritably in a non-volatile manner,

**Support:** See, for example, the present Application page 13, lines 17-25; and FIG. 4 (14).

wherein the robot is equipped with a memory reader/writer which accesses the second memory installed in the cartridge received by the robot,

**Support:** See, for example, the present Application page 13, lines 9-13; page 15, lines 1-3; and FIG. 3 (6b); FIG. 5 (16).

wherein one of the multiple cartridges is a diagnostic cartridge for the library device and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory, and

**Support:** See, for example, the present Application page 14, lines 5-8; and FIG. 4 (14, 13).

wherein the backup control information is transferred to the first memory of the control board from the diagnostic cartridge when the control board is replaced.

**Support:** See, for example, the present Application page 14, lines 9-22; page 17, line 22 to page 18, line 5; and FIG. 4 (14); FIG. 3 (12); FIG. 6 (S04).

Independent claim 1 is directed to "A library device ..." (FIG. 1, (1)).

As shown in FIG. 1, the library device (1) comprises a cell array (2), media drives (5), a robot (6), and a control board (8\_1). The cell array (2) has cells, each cell can contain a cartridge (3).

Further, the control board (8\_1) controls the operation of the library device (1). The control board (8\_1) has a first memory (12) which stores control information needed to control the library device (1) (for example, page 12, lines 21-24).

Further, each cartridge (3) contains a storage medium (e.g., magnetic tape - page 11, lines 17-19) and a second memory (14).

Further, one of the cartridges (3) is a diagnostic cartridge (13) and the second memory (14) of this diagnostic cartridge (13) stores backup information of the control information stored in the first memory (12) of the control board (8\_1) (for example, page 14, lines 5-8).

Further, the backup control information stored in the second memory (14) of the diagnostic cartridge (13) is transferred to the first memory (12) of the control board (8\_1), when the control board (8\_1) is replaced (for example, page 14, lines 9-22).

**B. Independent claim 10**

10. (previously presented) A library device, comprising:

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (1).

a cell array which consists of an array of multiple cells each of which contains one of multiple cartridges each containing a storage medium;

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (2) and page 11, lines 17-19.

media drives in which the cartridges are removably mounted and which access the storage medium contained in the cartridges;

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (5, 3).

a robot which transfers the cartridges between the cell array and the media drives; and

**Support:** See, for example, the present Application page 13, lines 9-13; page 15, lines 1-3; and FIG. 3 (6b); FIG. 5 (16).

a control board which controls operation of the library device, being equipped with a first memory which stores control information needed to control the operation of the library device,

**Support:** See, for example, the present Application page 11, lines 4-16; and FIG. 1 (8\_1, 3) and page 12, lines 1-11 and lines 21-24; page 13, lines 1-8; and FIG. 3 (12).

wherein each of the cartridges comprises a second memory which stores information,

**Support:** See, for example, the present Application page 13, lines 17-25; and FIG. 4 (14).

wherein the robot is equipped with a memory reader/writer



which accesses the second memory installed in the cartridge received by the robot,

**Support:** See, for example, the present Application page 13, lines 9-13; page 15, lines 1-3; and FIG. 3 (6b); FIG. 5 (16).

wherein one of the multiple cartridges is a diagnostic cartridge for the library device and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory, and

**Support:** See, for example, the present Application page 14, lines 5-8; and FIG. 4 (14, 13).

wherein the backup control information is transferred to the control board from the diagnostic cartridge when the control information in the control board needs to be restored.

**Support:** See, for example, the present Application page 14, lines 9-22; page 20, lines 1-14; and FIG. 4 (14); FIG. 3 (12); and FIG. 8.

Independent claim 10 is directed to “A library device ...” (FIG. 1, (1)).

As shown in FIG. 1, the library device (1) comprises a cell array (2), media drives (5), a robot (6), and a control board (8\_1). The cell array (2) has cells, each cell can contain a cartridge (3).

Further, the control board (8\_1) controls the operation of the library device (1). The control board (8\_1) has a first memory (12) which stores control information needed to control the library device (1) (for example, page 12, lines 21-24).

Further, each cartridge (3) contains a storage medium (e.g., magnetic tape - page 11, lines 17-19) and a second memory (14).

Further, one of the cartridges (3) is a diagnostic cartridge (13) and the second memory (14) of this diagnostic cartridge (13) stores backup information of the control information stored in the first memory (12) of the control board (8\_1) (for example, page 14, lines 5-8).

Further, the backup control information stored in the second memory (14) of the diagnostic cartridge (13) is transferred to the first memory (12) of the control board (8\_1), when the control information in the control board (8\_1) needs to be restored (for example, page 20, lines 1-14 and FIG. 8).

In relation to independent claim 1: Independent claim 10 requires “when the control information in the control board needs to be restored.” Further, independent claim 10 does not

require independent claim 1's limitation "rewritably in a non-volatile manner" in claim elements "a control board which controls operation of the library device, being equipped with a first memory which stores control information needed to control the operation of the library device" and "wherein each of the cartridges comprises a second memory which stores information."

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1, 2, 5, 10 are rejected under 35 USC 103(a) as being unpatentable over Kulakowski (US Patent No. 6,731,455) and Hanoaka (US Patent No. 6,144,519).

Claims 3-4 and 6-8 are rejected under 35 USC 103(a) as being unpatentable over Kulakowski, Hanoaka and Utsumi (US Patent No. 5,967,339).

## VII. ARGUMENTS

1. Claims 1, 2, 5, 10 are rejected under 35 USC 103(a) as being unpatentable over Kulakowski (US Patent No. 6,731,455) and Hanoaka (US Patent No. 6,144,519).

I. Independent claim 1: A first issue is whether the Office Action has established a prima facie case of obviousness of the independent claim 1, based upon Kulakowski and Hanoaka.

I.a. A first sub-issue of the second issue is whether the Office Action provides evidence expressly or implicitly which as a whole show that the legal determination sought to be proved (i.e., whether the reference teachings establish a prima facie case of obviousness) is more probable than not by the preponderance of evidence burden-of-proof standard (37 CFR 1.56(b)).

To support a prima facie case of obviousness, Kulakowski and Hanoaka must either expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning, namely the other rationale identified in KSR, as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of Kulakowski and Hanoaka (see generally, MPEP 706.02(j); MPEP 2141-III; and MPEP 2143 (Example Rationales). The obviousness rejection is based upon the teaching-suggestion-motivation rationale.

A benefit of claim 1 is to restore operation of a library device quickly, when a control board of the library device is replaced. In other words, a benefit of claim 1 is to restore operation of the library device when the control board's control information for operation of the library device requires restoration because of control board's replacement.

The language of claim 1 expressly requires "a library device" having a configuration of "a cell array ... of multiple cells each of which contains one of multiple cartridges" and each cartridge "containing a storage medium." The "library device" has "media drives in which the cartridges are removably mounted and which access the storage medium contained in the cartridges. In the Office Action rejection, the claimed "cartridge" is equated to Kulakowski's hard disk drives 58 hot plugged in and out of the drive interfaces (Kulakowski column 4, lines 45-65).

However, the language of claim 1 also requires "a control board (8-1) which controls operation of the library device (1), being equipped with a first memory which stores control information ..." and "wherein the **backup control information is transferred** to the first memory

of the control board **from the diagnostic cartridge when the control board is replaced.**" The Office Action relies upon Kulakowski's FIG. 2 and column 4, lines 45 to column 5, line 20 and column 11, lines 20-45, for allegedly discussing the claimed "control board," however, these discussions only relate to a library controller 52, which is a microprocessor and includes interfaces and code to control and manage the operation of the ... automated library 50. So Kulakowski does not expressly or implicitly disclose how library controller's 52 code is restored, when the library controller 52 is replaced.

Further, the language of claim 1 provides "each of the cartridges contains the storage medium and ... **a second memory** (14 in FIG. 4) ... the robot (6 - FIG. 3) is equipped with a memory reader/writer (6b - FIG. 3) which accesses the second memory (14) installed in the cartridge (3) received by the robot." Further, the language of claim 1 provides "wherein one of the multiple cartridges is **a diagnostic cartridge for the library device** and **the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12).**" And the control board (8\_1) comprises the first memory (12). The Office Action relies upon Kulakowski FIGS. 1, 3, and column 4, lines 10-45, which discuss the gripper 62 interfacing with a disk drive 2, 58, and the disk drive 2 having a memory 24. So the Office Action essentially asserts that Kulakowski's gripper 62 can read the memory 24 of the hard disk 2. However, the memory 24 of the disk drive 2 is for transmitting data between the disk drive 2 and the gripper 62, and Kulokowski does not expressly or implicitly discuss the memory 24 storing the claimed "**backup information which is the same as the control information stored in the first memory (12)**" of the control board (8\_1). The Office Action page 3, acknowledges this, so the Office Action relies upon Hanaoka.

Further, Kulakowski also does not expressly or implicitly disclose one of its disk drives 2 being a "diagnostic," because the phrase "diagnostic" does not appear in Kulokowski's description.

Hanaoka relates to a library apparatus with a plurality of accessors that discriminate ordinary cartridges from cleaning cartridges (see Hanaoka, Abstract). It is submitted a cleaning cartridge differs from the language of claim 1, namely "**a diagnostic cartridge and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12).**" In other words, nothing has been cited or found that Hanoaka expressly or implicitly discusses a diagnostic cartridge that stores backup information of the control information of the control board (8\_1). Further, the phrase

“diagnostic” does not appear in Kulakowski’s description, so Kulakowski cannot be supporting evidence of implicit disclosure to one skilled in the art.

Further, the Office Action relies upon Hanoaka column 2, lines 38-48. Hanoaka column 2, lines 38-48 and column 26, lines 36-53, discuss use of a floppy disk unit 104 (FIG. 7) to store back up of cell address translation table 82. It is submitted that Hanoaka’s floppy disk unit 104 differs from the claimed **“a diagnostic cartridge and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12),”** because the specification page 3, lines 1-5 expressly discuss the shortcomings of use of floppy disk unit 104 to restore control information of a control board of the library device, namely operator error by being a manual process and increase maintenance time by being too slow. Hanoaka column 26, lines 36-45 discuss that upon a mismatch between a value contained in the table stored in the ROM and the value contained in the floppy table, the mismatch value is displayed on the display unit 98 at which time an operator can select the FD selection switch 100 to select the value contained in the table stored in the floppy disk.

A prima facie case of obviousness based upon Kulakowski and Hanaoka cannot be established, because there is no evidence that one skilled in the art would combine Kulakowski’s library device, which is silent on a diagnostic disk drive 2, with Hanoaka’s floppy drive unit 104 that stores back up cell address translation table 82, and then further modify Kulakowski’s disk drive 2 and/or Hanoaka’s cartridges to provide a **“a diagnostic cartridge”** and further modify **“a diagnostic cartridge”** to have **“a second memory”** in addition to the storage medium of the diagnostic cartridge and **“the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12),”** and **“the backup control information is transferred to the first memory of the control board from the diagnostic cartridge when the control board is replaced,”** and seen a benefit of quickly and reliably returning the library device to working order when the control board (8\_1) has been replaced.

The Office Action paragraph spanning pages 3-4, asserts that one of ordinary skill in the art would have stored the back up information in Kulakowski’s diagnostic cartridge since it is commonly well known to have done so per Hanoaka and the modification would provide backup control information for the library system. However, Kulakowski is silent on any diagnostic cartridge and Hanoaka uses a floppy disk unit 104 for backing up the cell address translation

table 82, and further, the language of claim 1 does not merely provide “a diagnostic cartridge,” but the language of claim 1 provides “**a diagnostic cartridge and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12).**” In other words, the Office Action does not provide any rationale that one skilled the art would, by a preponderance of evidence, modify Kulakowski’s disk drive 2 to be a diagnostic disk drive, and further use the disk drive 2’s memory 24, which is used for data transmission to/from the disk drive 2, to store control information of the library system. The language of claim 1 provides “**the second memory installed in the diagnostic cartridge stores backup information,**” and there is no evidence expressly or implicitly in Kulakowski and/or Hanaoka’s floppy drive unit 104 configuration to modify either Kulakowski’s disk drive units 2 and/or Hanaoka’s cartridges to have both features of serving as “**a diagnostic cartridge**” and have a “**second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12).**”

Regarding the first sub-issue, the obviousness rejection does not meet the preponderance of evidence burden-of-proof standard, because it is not more probable than not that one skilled in the art would modify Hanaoka’s cartridge to provide the claimed diagnostic cartridge with a memory storing back up control information of the library device and the back up control information is transferred when the control board is replaced. Thus, the obviousness rejection cannot be sustained, because a prima facie case of obviousness over Kulakowski and Hanaoka cannot be established.

I.b. A second sub-issue of the second issue is whether the Office Action sets forth reasoning in support of a prima facie case of obviousness of the claims based upon Kulakowski and Hanoaka.

To meet the language of claim 1, namely “a control board (8-1) which controls operation of the library device (1), being equipped with a first memory which stores control information ...” and “wherein the **backup control information is transferred** to the first memory of the control board **from the diagnostic cartridge when the control board is replaced,**” the Office Action rejection does not set forth reasoning as to how library controller’s 52 code is restored when the library controller 52 is replaced. In particular, the Office Action rejection rationale on page 3 is silent on where Kulokowski expressly or implicitly discloses one of its disk drives 2 being a “diagnostic,” but concludes that “Kulakowski et al shows that the diagnostic cartridge memory is

capable of storing any type of information.” The phrase “diagnostic” does not appear in Kulakowski’s description.

Further, Hanaoka only discusses a cleaning cartridge and is silent on the claimed “diagnostic cartridge.” Further, Hanaoka teaches away from the claimed “diagnostic cartridge” by backing up the cell address translation table 82 in a floppy disk unit 104.

II. Independent claim 10:

Independent claim 10 requires the limitations “***a diagnostic cartridge ... and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12).***” Further, independent claim 10 requires “wherein the ***backup control information is transferred*** to the control board ***from the diagnostic cartridge when the control information in the control board needs to be restored.***” As discussed with respect to independent claim 1, a prima facie case of obviousness based upon Kulakowski and Hanaoka cannot be established, because there is no evidence that one skilled in the art would combine Kulakowski’s library device, which is silent on a diagnostic disk drive 2, with Hanaoka’s floppy drive unit 104 that stores back up cell address translation table 82, and then further modify Kulakowski’s disk drive 2 and/or Hanaoka’s cartridges to provide a “***a diagnostic cartridge***” and further modify “***a diagnostic cartridge***” to have “***a second memory***” in addition to the storage medium of the diagnostic cartridge and require “***the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory (12),***” and “***the backup control information*** is transferred to the control board from the diagnostic cartridge ***when the control information in the control board needs to be restored,***” and seen a benefit of quickly and reliably returning the library device to working order when the control information of the control board (8\_1) needs to be restored.

III. Dependent claim 2: A first issue is whether the Office Action has established a prima facie case of obviousness of the dependent claim 2, based upon Kulakowski and Hanaoka.

III.a. A first sub-issue of the first issue is whether the Office Action provides evidence expressly or implicitly which as a whole show that the legal determination sought to be proved (i.e., whether the reference teachings establish a prima facie case of obviousness) is



more probable than not by the preponderance of evidence burden-of-proof standard (37 CFR 1.56(b)).

The Office Action relies upon Hanaoka column 2, lines 38-48, however, Hanaoka is merely concerned with determining the location information of a disk to discriminate between a regular disk and a cleaning disk (see Hanaoka, Abstract and col. 2, lines 46-52). Further, according to Hanaoka, a measurement to determine the location of the disk can be performed without using an accessor (see Hanaoka, col. 26, lines 47-48). According to Hanaoka, location information of the disk is determined by selecting the values contained in the cell address table stored in the floppy disk (see Hanaoka, col. 26, lines 49-53). As a result, in Hanaoka, location information is obtained to distinguish between the regular disks and cleaning disks.

In contrast to Hanaoka, claim 2 provides “the control board judges whether ***ID information ... represents the library device***, and if the ***ID information ... does not represent the library device***, the ***robot ... sends the backup information to the control board***, and the control board writes the backup information received from the robot into the first memory.” Hanaoka does not expressly or implicitly discuss the above-mentioned features recited in claim 2, because Hanaoka is merely concerned with determining the location information of a disk rather than claim 2’s determining whether “***ID information ... represents the library device***.” Therefore, location information described in Hanaoka is not the same as ID information as recited in claim 2, and nothing has been cited or found that one skilled in the art would modify Hanaoka’s discussion of cell addresses as location of cartridges to provide the claimed “***ID information ... represents the library device***,” providing a benefit that “if the ***ID information ... does not represent the library device***, the ***robot ... sends the backup information to the control board***, and the control board writes the backup information received from the robot into the first memory.”

Further, Kulakowski fails to expressly or implicitly disclose the above-mentioned features, because Kulakowski is merely concerned with data communications between a gripper and the Hard Disk Drive, but does not judge “whether ***ID information ... represents the library device***” as recited in claim 2.

Reversal of the Examiner rejection is requested.

2. Claims 3-4 and 6-8 are rejected under 35 USC 103(a) as being unpatentable over Kulakowski, Hanoaka and Utsumi (US Patent No. 5,967,339).

I. Dependent claim 3: A first issue is whether the Office Action has established a prima facie case of obviousness of the dependent claim 3, based upon Kulakowski, Hanoaka and Utsumi.

I.a. A first sub-issue of the first issue is whether the Office Action provides evidence expressly or implicitly which as a whole show that the legal determination sought to be proved (i.e., whether the reference teachings establish a prima facie case of obviousness) is more probable than not by the preponderance of evidence burden-of-proof standard (37 CFR 1.56(b)).

Utsumi is directed to reduce the size of a library apparatus by installing relative flags using cells of a storage rack to suppress the increase in the installation area or volume of a locker resulting from the installation of the relative flags (see Utsumi, Abstract).

In contrast to Hanaoka and/or Utsumi, dependent claim 3 provides “the library device comprises **a serial label which contains ID information representing the library device** and the robot comprises a first sensor which reads the serial label” and “upon power-up, the robot **reads the serial label using the first sensor, extracts the ID information** from the serial label, and sends the ID information to the control board, and the control board checks the ID information received from the robot against the ID information stored in the first memory, and thereby **judges whether the ID information stored in the first memory represents this library device.**” In other words, Utsumi only discloses installing a flag using a cell of a storage rack, but fails to disclose expressly or implicitly claim 3, and nothing has been cited or found that one skilled in the art would modify Utsumi’s discussion of a cell flag, such as cell flag 60 for the diagnostic cell into which a diagnostic cartridge 62 can be inserted, to provide the claimed “**ID information represents the library device,**” providing a benefit that “**judges whether the ID information stored in the first memory represents this library device.**”

II. Dependent claim 4: A first issue is whether the Office Action has established a prima facie case of obviousness of the dependent claim 4, based upon Kulakowski, Hanoaka and Utsumi.

II.a. A first sub-issue of the first issue is whether the Office Action provides evidence expressly or implicitly which as a whole show that the legal determination sought to be proved (i.e., whether the reference teachings establish a prima facie case of obviousness) is more probable than not by the preponderance of evidence burden-of-proof standard (37 CFR 1.56(b)).

In contrast to Kulakowski, Hanaoka and Utsumi, claim 4 requires “***if the two pieces of ID information do not match ... the control board finds location information about the cell containing the diagnostic cartridge.***” As discussed with respect to dependent claims 2-3, Kulakowski, Hanaoka and Utsumi are all silent on the claimed “***ID information representing the library device,***” providing a benefit of triggering, based upon whether the “***ID information represent[s] the library device,***” access to the diagnostic cartridge to restore the back up information from the “***second memory installed in the diagnostic cartridge.***”

Reversal of the Examiner rejection is requested.

Appellant submits that pending appealed claims patentably distinguish over the relied upon prior art. Reversal of the Examiner's rejections is requested. Allowance of the claims is requested.

Respectfully submitted,  
STAAS & HALSEY LLP

/Mehdi D. Sheikerz/

Date: \_\_\_\_\_December 9, 2008\_\_\_\_\_

By: \_\_\_\_\_

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**VIII. CLAIMS APPENDIX**

1. (previously presented) A library device comprising:
  - a cell array which consists of an array of multiple cells each of which contains one of multiple cartridges each containing a storage medium;
  - media drives in which the cartridges are removably mounted and which access the storage medium contained in the cartridges;
  - a robot which transfers the cartridges between the cell array and the media drives; and
  - a control board which controls operation of the library device, being equipped with a first memory which stores control information needed to control the operation of the library device, rewritably in a non-volatile manner,wherein each of the cartridges contains the storage medium and comprises a second memory which stores information rewritably in a non-volatile manner,
  - wherein the robot is equipped with a memory reader/writer which accesses the second memory installed in the cartridge received by the robot,
  - wherein one of the multiple cartridges is a diagnostic cartridge for the library device and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory, and
  - wherein the backup control information is transferred to the first memory of the control board from the diagnostic cartridge when the control board is replaced.
2. (original) The library device according to claim 1, wherein:
  - the first memory stores, as part of the control information, ID information which represents the library device; and
  - upon power-up, the control board judges whether the ID information stored in the first memory represents the library device, and if the ID information stored in the first memory does not represent the library device, the robot takes the diagnostic cartridge out of the cell array, reads the backup information out of the second memory installed in the diagnostic cartridge, and sends the backup information to the control board, and the control board writes the backup information received from the robot into the first memory.
3. (original) The library device according to claim 2, wherein:

the library device comprises a serial label which contains ID information representing the library device and the robot comprises a first sensor which reads the serial label; and

upon power-up, the robot reads the serial label using the first sensor, extracts the ID information from the serial label, and sends the ID information to the control board, and the control board checks the ID information received from the robot against the ID information stored in the first memory, and thereby judges whether the ID information stored in the first memory represents this library device.

4. (original) The library device according to claim 3, wherein:

the cell array has, over a plurality of locations, cell flags which are marks used to recognize locations of the plurality of cells composing the cell array, the robot comprises a second sensor to detect the locations of the cell flags, and the first memory stores, as part of the control information, location information about the cell flags detected by the second sensor or location information about the cells corresponding to the cell flags detected by the second sensor; and

upon power-up, if the two pieces of ID information do not match, the robot detects the locations of the cell flags using the second sensor and sends the location information about the cell flags to the control board, the control board finds location information about the cell containing the diagnostic cartridge based on the location information received from the robot, and the robot takes the diagnostic cartridge out of the cell containing the diagnostic cartridge by moving according to the location information, found by the control board, about the cell containing the diagnostic cartridge.

5. (original) The library device according to claim 1, wherein the cartridges contain magnetic tape as the storage medium and the media drives access the magnetic tape contained in the cartridges.

6. (original) The library device according to claim 1, wherein the second memory installed in the cartridge and the memory reader/writer installed on the robot communicate with each other wirelessly.

7. (original) The library device according to claim 3, wherein the serial label is a barcode label which uses a barcode as the ID information about the library device and that the first sensor reads the barcode recorded on the barcode label using a one-dimensional array of light-sensitive devices.

8. (original) The library device according to claim 4, wherein the first sensor combines the second sensor.

9. (Withdrawn) A method, comprising:  
transferring at least one of a plurality of removable cartridges between a cell array and a media drive;  
storing control information in a first memory to control an operation of a library device;  
and  
installing a second memory in a diagnostic cartridge to store backup information that is similar to the control information stored in the first memory unit, where the at least one of the plurality of removable cartridges is the diagnostic cartridge.

10. (previously presented) A library device, comprising:  
a cell array which consists of an array of multiple cells each of which contains one of multiple cartridges each containing a storage medium;  
media drives in which the cartridges are removably mounted and which access the storage medium contained in the cartridges;  
a robot which transfers the cartridges between the cell array and the media drives; and  
a control board which controls operation of the library device, being equipped with a first memory which stores control information needed to control the operation of the library device,  
wherein each of the cartridges comprises a second memory which stores information,  
wherein the robot is equipped with a memory reader/writer which accesses the second memory installed in the cartridge received by the robot,  
wherein one of the multiple cartridges is a diagnostic cartridge for the library device and the second memory installed in the diagnostic cartridge stores backup information which is the same as the control information stored in the first memory, and  
wherein the backup control information is transferred to the control board from the diagnostic cartridge when the control information in the control board needs to be restored.

**IX. EVIDENCE APPENDIX**

None

**X. RELATED PROCEEDING APPENDIX**

None